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EXAMINER
GREY, CHRISTOPHER P

ART UNIT	PAPER NUMBER
2667	

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Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/961,076	OFEK ET AL.
		Examiner	Art Unit
		Christopher P. Grey	2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>21 September 2001</u>.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-67</u> is/are pending in the application.
   4a) Of the above claim(s) <u>29-33, 37-40, 42-50 and 59-67</u> is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-28, 34-36, 41 and 51-58</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some * c)☐ None of:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____.
   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1.   Claims 1, 2, 3, 5, 6, 11, 12, 13, 14, 27, 41, 51, 52, 53, 54, 55, 56, 58 are

rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over claim 1 of U.S. Patent No. 6735199.

Although the conflicting claims are not identical, they are not patentably distinct

from each other because:

Regarding claim 1 and 51, U.S Patent No. 6735199 discloses a first

communications switch and a second communications switch connected by

at least one communications link, comprising at least one channel, for

transmitting a plurality of data units from said communications link to the output

of the switching System (Col 42 lines 39-43);

a Common Time Reference (CTR), divided into a plurality of contiguous time

frames (TFs) (Col 42 lines 44-48);

wherein the time frames have at least one of a plurality of predefined time

durations (Col 42 lines 61-63), where it would have been obvious to one of the

ordinary skill in the art at the time of the invention that a time frame is a time

duration, and furthermore, that the time frame is predefined (Col 43 lines 13-20);

wherein each of the connections switches is further comprised of a plurality

of input ports and a plurality of output ports, each of the input ports connected to

and receiving data units from at least one of the channels, and each of the output

ports connected and transmitting data units to at least one of the channels (Col

42 lines 44-48);

wherein each of the communications switches has a switch controller, coupled to

the CTR, the respective input ports, and the respective output ports (Col 42 lines

61-63);

wherein each of the first and second communications switches has a switch

fabric coupled to the respective switch controller, the respective input ports, and

the respective output ports (Col 42 lines 64-67); and

wherein each of the switch controllers is responsive to le CTR and to the

respective predefined time durations of respective ones of the time frames, for

scheduling a connection via the switch fabric from a respective one of the input

ports, on a respective one of the input channels during a predefined time interval

(Col 43 lines 1-5).

Regarding claim 41, 58, U.S Patent No. 6735199 discloses a switch with plurality of input ports each with a plurality of input channels and plurality of output ports each with a plurality of output channels for receiving and transmitting the data units (Col 42 lines 49-66);

a common time reference signal coupled to said switch (Col 42 lines 61-63);

wherein the common time reference is partitioned into time frames, and wherein the transfer of the data units is provided during respective ones of a plurality of the time frames (Col 42 lines 44-49 and Col 43 lines 13-20);

wherein the time frames have at least one predefined duration (Col 42 lines 61-63), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a time frame is a time duration, and furthermore, that the time frame is predefined (Col 43 lines 13-20);;

wherein the time frames at each of the input channels is grouped into time cycles, wherein each of the time frame durations at each of the input channels is one of a plurality of predefined durations (Col 42 lines 45-49 and Col 43 lines 13-20);

wherein the time frames at each of the output channels are grouped into time cycles, wherein each of the time frame durations at each of the output channels is one of a plurality of predefined durations (Col 42 lines 45- 49 and Col 43 lines 13-20); and

a switch fabric for coupling incoming data units between selected ones of the input channels and the output channels, wherein each of the selected input channels is associated with an associated first time frame duration, and wherein

each of the selected output channels is associated with an associated second

time frame duration (Col 42 lines 49-56 and Col 42 lines 64-66).

Transferring the data units during respective ones of the time frames (Col 43

lines 12-20).

Regarding claim 2, U.S Patent No. 6735199 discloses each of the switch

controllers defines the coupling from each one of the respective input ports for

data units received during any one of the time frames, on a respective one of the

channels, for output during a predefined time frame to at least one selected one

of the respective output ports on at least one selected respective one of the

channels (Col 43 lines 1-12).

Regarding claim 3, U.S Patent No. 6735199 discloses the data units èat

are output through the switch fabric during a first predefined time frame on a

selected respective one of the channels through the respective output port on the

first connections switch are forwarded through the respective output port of the

second communications switch during a second predefined time frame on a

selected respective one of the channels responsive to the CTR (Col 43 lines 13-

20).

Regarding claim 5, 6, U.S Patent No. 6735199 discloses the data units

received at multiple ones of the channels during a first one of the predefined time

frames are combined for output during a second one of the predefined time frames responsive to the switch controller (Col 43 lines 6-12).

Regarding claims 11, 12, 13, 54, 55, 56, U.S Patent No. 6735199 discloses time frames of a predefined duration, where a controller schedules the transfer of the data units received during at least one of a plurality of time frames, for output during a different one of the time frames as disclosed in the rejection of claim 1. It would have been obvious to one of the ordinary skill in the art at the time of the invention that any single time frame may be divided in to a number of sub time frames, where clearly a number of sub time frames combined is equivalent to one time frame, thus the durations are less. It would have also been obvious to transfer data units based on the sub-time frame.

Regarding claim 14, U.S Patent No. 6735199 discloses an optical channel (Col 44 lines 15-17), where it would have been obvious to one of the ordinary skill in the art at the time of the invention to support a number of different channels based on the possibilities of switches as disclosed in Col 44 lines 47-52.

Regarding claim 27, U.S Patent No. 6735199 in claim 15 discloses the switch fabric is at least one of the following: a crossbar, a generalized multi-stage cube network, a Clos network, a Benes network an Omega network, a Delta network, a multi-stage shuffle exchange network, a Banyan network, a

combination of demultiplexers and multiplexers, a passive optical star, a plurality

of passive optical stars, a plurality of tunable lasers, a plurality of tunable lasers

connected to at least one passive optical star, a plurality of optical mnable

receivers connected to at least one passive optical star, and an optical switch

(Col 44 lines 47-52) .

Regarding claim 52, U.S Patent No. 6735199 discloses defining the

coupling from each one of the respective input ports for data units received

during any one of the time frames, on a respective one of the channels, for

output during a predefined time frame to at least one selected one of the

respective output ports on at least one selected respective one of the channels

(Col 43 lines 6-12).

Regarding claim 53, U.S Patent No. 6735199 discloses outputting the

data units during a first predefined time frame on a selected respective one of the

channels through the respective output port on a first communications switch;

and forwarding through the respective output port of a second communications

switch during a second predefined time frame on a selected respective one of the

channels, responsive to the CTR (Col 45 lines 13-20).

2.   Claim 4, 7, 8, 9, 10, 20, 21, 22, 15-19, 25, 26, 28, 34, 35, 36 are rejected

under the judicially created doctrine of obviousness-type double patenting as

being unpatentable over of U.S. Patent No. 6735199 in view of US Patent No.

6760328.

Regarding claim 4, 7, 8, 9, 10, US Patent No. 6760328 discloses the first

and second predefined time frames are of different time durations (Col 23 lines

36-38).

Regarding claim 20, 21, 22 and 23 US Patent No. 6760328 discloses the

first and second predefined time frames being of different time durations (Col 23

lines 36-38). It would have been obvious to one of the ordinary skill in the art at

the time of the invention that is first and second times frames have different

predefined time durations, the difference between the time frames will also be

predefined.

Regarding claim 15, US Patent No. 6760328 discloses data packets (Col

22 lines 41-47), where it would have been obvious to one of the ordinary skill in

the art at the time of the invention that the data units may be any data, including

the packets or any other type of data within the scope of the invention.

Regarding claim 16, US Patent No 6760328 discloses during selected

ones of the time frames, transmitting data units over the channel (Col 23 lines

44-47).

Regarding claim 17, US Patent No. 6760328 discloses a predefined

number of at least one consecutive one of the time frames comprising a time

cycle, wherein a predefined number of at least one consecutive one of the time cycles comprise a super cycle (Col 24 lines 29-40).

Regarding claim 18, 19, US Patent No. 6760328 discloses the switch controller scheduling the transfer of data units from and to selected ones of the channels on a periodically recurring basis (Col 24 lines 30-40).

Regarding claim 25, 26 US Patent No 6760328 discloses time frames of a predefined duration (Col 23 lines 33-38). It would have been obvious to one of the ordinary skill in the art at the time of the invention to divide any time frame into sub time frames, where if a time frame has a predefined duration, a sub-time frame would also have a dedicated duration.

Regarding claim 28, US Patent No. 6735199 discloses wherein the plurality of input ports each receives data unit over at least one of a plurality of incoming channels (j), and wherein the plurality of output ports each sends data units over at least one of a plurality of outgoing channels (1); wherein each of the incoming channels (j) has a unique time reference (UTR-j) that is phase independent of the C1*2.) wherein the U'rR-j is divided into continuous U'lx-j super cycles; wherein the UW-j super cycles are divided into continuous UW-j time cycles; and wherein the U'rmj time cycles is divided into continuous Ua-j time frames (Col 43 lines 20-30;

US Patent No. 6735199 discloses the UTR-J' time frames have a plurality of predefined time durations (Col 22 lines 49-55).

Regarding claim 34, US Patent No. 6735199 discloses buffer queues, wherein each of the respective buffer queues is associated, for each of the CTR

time frames, with a combination of one of the incoming channels and one of the

outgoing channels; a mapping controller within the switch controller system for

logically mapping, for each of the (U1'R-jl time frames, selected incoming

channels û') to selected buffer queues, and for logically mapping, for each of the

CTR time frames, selected ones of the plurality of buffer queues to selected

outgoing channels (1)9 wherein each of the buffer queues is further comprised of

an alignment subsystem comprised of a plurality of time frame queues, wherein

each of the time frame queues comprises means to determine that the respective

time frame queue is empty, wherein each of the time frame queues further

comprises means to determine that the respective time frame queue is not

empty; wherein the data units that arrive via the incoming channel U) are stored

in the respective time frame queue of the alignment subsystem responsive to the

mapping controller; and wherein the mapping controller further provides for

coupling of selected ones of the time frame queues to respective ones of the

outgoing channels (1), for transfer of the respective stored data units during the

respective associated time CTR time frames (Col 43 lines 35-61).

Regarding claim 35, US Patent No. 6735199 discloses wherein the alignment

subsystem, responsive to the mapping controller, transfers the data units

associated with a respective first time frame as defied by the Ulna-j into an empty

first time frame queue from incoming channel U), during the respective first time

frame ms defied by the U'rmj , wherein the first time frame queue is designated

as full; and wherein the alignment subsystem, responsive to the mapping

controller, transfers data unit out of a 111 second time frame queue to outgoing

channel (1), during at least one of the following: a selected one of the CTR time

frames and a selected one of the CTR subtime frames, wherein the second time

frame queue is designated as empty (Col 43 lines 63-Col lines 11).

Regarding claim 36, US Patent No. 6735199 discloses the first time

frame queue and the second time frame queue being mutually exclusive at all

times (Col 44 lines 10-11)

3.   Claim 24 and 57 are rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over of U.S. Patent

No. 6735199 in view of US Patent No. 6727132.

Regarding claim 24, 57, US Patent No. 6272132 discloses a time frame

delimiter separating time frames (Col 21 lines 9-11). It would have been obvious

to one of the ordinary skill in the art at the time of the invention that a sub time

frame is inherent within the art, where if time frames can be separated by a

delimiter, sub time frames may be separated as well.

Allowable Subject Matter

4.   Claims 29-33, 37-40, 42-50, and 59-67 are objected to as being

dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any

intervening claims.

Conclusion .

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

(a)   Kim (US 6044091) discloses a method and apparatus for scheduling cells

based on presynchronized frames.

(b)   Zheng (US 5392280) discloses a data transmission system and

scheduling protocol for connection oriented packet or cell switching networks.

(c)   Hayter (US 5577035) discloses an apparatus and method of processing

bandwidth requirements in an ATM switch.

(d)   Ketseoglou (US 6130886) discloses coexisting communication systems.

6.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Christopher P. Grey whose telephone number

is (571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

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direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

Christopher Grey
Examiner
Art Unit 2667

Oct 14, 2005

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